I CLAIM:

1. An improvement to a spread-spectrum system having a base station and a plurality of remote stations (RS), with said base station (BS) having a BS-spread-spectrum transmitter for transmitting a plurality of BS-spread-spectrum signals at a first frequency and a BS-spread-spectrum receiver for receiving, at a second frequency, a plurality of RS-spread-spectrum signals from said plurality of remote stations, with the plurality of BS-spread-spectrum signals at the first frequency outside a correlation bandwidth of the plurality of RS-spread-spectrum signals at the second frequency, with each of said plurality of remote stations having an RS-spread-spectrum transmitter for transmitting an RS-spread-spectrum signal at the second frequency, the improvement comprising:

a BS transmitter, located at said base station, for transmitting a BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than twenty per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals;

each of said plurality of remote stations including an RS receiver, for receiving the BS-channel-sounding signal at the second frequency, each RS receiver having,

an RS demodulator for tracking the BS-channel-sounding signal, thereby outputting an RS-receiver signal;

a frequency-adjust circuit, coupled to said RS

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demodulator and responsive to the RS-receiver signal, for compensating to the second frequency the RS-spread-spectrum signal of said RS-spread-spectrum transmitter located at said remote station;

each of said plurality of remote stations including an RS-power-level circuit, responsive to the RS-receiver signal, for adjusting an initial RS-power level of said RS-spread-spectrum transmitter located at said remote station; and

an interference-reduction subsystem, located at said base station and at a front end to said BS-spread-spectrum receiver, for reducing, at the second frequency, the BS-channel-sounding signal from the RS-spread-spectrum signal arriving at said base station.

2. An improvement to a spread-spectrum system having a base station and a plurality of remote stations (RS), with said base station (BS) having a BS-spread-spectrum transmitter for transmitting a plurality of BS-spread-spectrum signals at a first frequency and a BS-spread-spectrum receiver for receiving, at a second frequency, a plurality of RS-spread-spectrum signals from said plurality of remote stations, with the plurality of BS-spread-spectrum signals at the first frequency outside a correlation bandwidth of the plurality of RS-spread-spectrum signals at the second frequency, with each of said plurality of

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remote stations having an RS-spread-spectrum transmitter for transmitting an RS-spread-spectrum signal at the second frequency, the improvement comprising:

a BS transmitter, located at said base station, for transmitting, using radio waves, a BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than twenty per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals;

each of said plurality of remote stations including an RS receiver, for receiving the BS-channel-sounding signal at the second frequency, each RS receiver having an RS demodulator for tracking the BS-channel-sounding signal, thereby outputting an RS-receiver signal;

each of said plurality of remote stations including an RS-power-level circuit, responsive to the RS-receiver signal, for adjusting an initial RS-power level of said RS-spread-spectrum transmitter located at said remote station; and

an interference-reduction subsystem, located at said base station and at a front end to said BS-spread-spectrum receiver, for reducing the BS-channel-sounding signal from the RS-spread-spectrum signal arriving at said base station.

3. An improvement to a spread-spectrum system having a base station and a plurality of remote stations (RS), with said base station (BS) having a BS-spread-spectrum transmitter for

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transmitting a plurality of BS-spread-spectrum signals at a first frequency and a BS-spread-spectrum receiver for receiving, at a second frequency, a plurality of RS-spread-spectrum signals from said plurality of remote stations, with the plurality of BS-spread-spectrum signals at the first frequency outside a correlation bandwidth of the plurality of RS-spread-spectrum signals at the second frequency, with each of said plurality of remote stations having an RS-spread-spectrum transmitter for transmitting an RS-spread-spectrum signal at the second frequency, the improvement comprising:

a BS transmitter, located at said base station, for transmitting, using radio waves, a BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than twenty per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals;

each of said plurality of remote stations including an RS receiver, for receiving the BS-channel-sounding signal at the second frequency, each RS receiver having,

an RS demodulator for tracking the BS-channel-sounding signal, thereby outputting an RS-receiver signal;

a frequency-adjust circuit, coupled to said RS demodulator and responsive to the RS-receiver signal, for compensating to the second frequency the RS-spread-spectrum signal of said RS-spread-spectrum transmitter located at said remote station; and

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an interference-reduction subsystem, located at said base station and at a front end to said BS-spread-spectrum receiver, for reducing the BS-channel-sounding signal from the RS-spread-spectrum signal arriving at said base station.

4. The improvement to the spread-spectrum system as set forth in claim 1, 2 or 3, with said BS transmitter transmitting the BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than ten per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

5. The improvement to the spread-spectrum system as set forth in claim 1, 2 or 3, with said BS transmitter transmitting the BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than five per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

6. The improvement to the spread-spectrum system as set forth in claim 1, 2 or 3, with said BS transmitter transmitting the BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than one per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

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7. An improvement to a spread-spectrum system having a base station and a plurality of remote stations (RS), with said base station (BS) having a BS-spread-spectrum transmitter for transmitting a plurality of BS-spread-spectrum signals at a first frequency and a BS-spread-spectrum receiver for receiving, at a second frequency, a plurality of RS-spread-spectrum signals from said plurality of remote stations, with the plurality of BS-spread-spectrum signals at the first frequency outside a correlation bandwidth of the plurality of RS-spread-spectrum signals at the second frequency, with each of said plurality of remote stations having an RS-spread-spectrum transmitter for transmitting an RS-spread-spectrum signal at the second frequency, the improvement comprising:

BS-transmitter means, located at said base station, for transmitting, using radio waves, a BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than twenty per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals;

each of said plurality of remote stations including RS-receiver means, for receiving the BS-channel-sounding signal at the second frequency, and for tracking the BS-channel-sounding signal, thereby outputting an RS-receiver signal;

each of said plurality of remote stations including

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RS-power-level means, responsive to the RS-receiver signal, for adjusting an initial RS-power level of said RS-spread-spectrum transmitter located at said remote station; and

interference-reduction means, located at said base station and at a front end to said BS-spread-spectrum receiver, for reducing the BS-channel-sounding signal from the RS-spread-spectrum signal arriving at said base station.

8. The improvement to the spread-spectrum system as set forth in claim 7, with said RS-receiver means at each of said plurality of remote stations further including compensating means, responsive to RS-receiver signal, for compensating to the second frequency the RS-spread-spectrum signal of said RS-spread-spectrum transmitter located at said remote station.

9. The improvement to the spread-spectrum system as set forth in claim 7 or 8, with said BS transmitter transmitting the BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than ten per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

10. The improvement to the spread-spectrum system as set forth in claim 7 or 8, with said BS transmitter transmitting the BS-channel-sounding signal at the second frequency, with the BS-

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channel-sounding signal having a bandwidth no more than five per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

11. The improvement to the spread-spectrum system as set forth in claim 7 or 8, with said BS transmitter transmitting the BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than one per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

12. A method for improving a spread-spectrum system having a base station and a plurality of remote stations (RS), with said base station (BS) having a BS-spread-spectrum transmitter for transmitting a plurality of BS-spread-spectrum signals at a first frequency and a BS-spread-spectrum receiver for receiving, at a second frequency, a plurality of RS-spread-spectrum signals from said plurality of remote stations, with the plurality of BS-spread-spectrum signals at the first frequency outside a correlation bandwidth of the plurality of RS-spread-spectrum signals at the second frequency, with each of said plurality of remote stations having an RS-spread-spectrum transmitter for transmitting an RS-spread-spectrum signal at the second frequency, the method comprising the steps of:

transmitting, using radio waves, from a BS

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transmitter, located at said base station, a BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than twenty per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals;

receiving, at each of said plurality of remote stations with an RS receiver, the BS-channel-sounding signal at the second frequency;

tracking, at each of said plurality of remote stations with an RS demodulator, a the BS-channel-sounding signal, thereby generating an RS-receiver signal;

adjusting, in response to the RS-receiver signal, an initial RS-power level of said RS-spread-spectrum transmitter located at said remote station; and

reducing the BS-channel-sounding signal from the RS-spread-spectrum signal arriving at said base station.

13. The method for improving the spread-spectrum system as set forth in claim 12, further including the step of compensating, in response to RS-receiver signal, to the second frequency the RS-spread-spectrum signal of said RS-spread-spectrum transmitter located at said remote station.

14. The method for improving the spread-spectrum system as set forth in claim 12 or 13, with the step of transmitting the

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BS-channel-sounding signal at the second frequency, including the step of transmitting the BS-channel-sounding signal with a bandwidth no more than ten per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

15. The method for improving the spread-spectrum system as set forth in claim 12 or 13, with the step of transmitting the BS-channel-sounding signal at the second frequency, including the step of transmitting the BS-channel-sounding signal with a bandwidth no more than one per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

16. The method for improving the spread-spectrum system as set forth in claim 12 or 13, with the step of transmitting the BS-channel-sounding signal at the second frequency, including the step of transmitting the BS-channel-sounding signal with a bandwidth no more than one per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

17. The method for improving the spread-spectrum system as set forth in claim 12 or 13, with the step of reducing the BS-channel-sounding signal further including the step of notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

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18. The method for improving the spread-spectrum system as set forth in claim 14, with the step of reducing the BS-channel-sounding signal further including the step of notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

19. The method for improving the spread-spectrum system as set forth in claim 15, with the step of reducing the BS-channel-sounding signal further including the step of notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

20. The method for improving the spread-spectrum system as set forth in claim 16, with the step of reducing the BS-channel-sounding signal further including the step of notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

21. An improvement to a spread-spectrum system having a plurality of base stations covering a geographic area, with each base station communicating within a geographic cell with a plurality of remote stations (RS), with each base station (BS) having a BS-spread-spectrum transmitter for transmitting a plurality of BS-spread-spectrum signals at a first frequency and a BS-spread-spectrum receiver for receiving, at a second

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frequency, a plurality of RS-spread-spectrum signals from said plurality of remote stations, with the plurality of BS-spread-spectrum signals at the first frequency outside a correlation bandwidth of the plurality of RS-spread-spectrum signals at the second frequency, with each of said plurality of remote stations having an RS-spread-spectrum transmitter for transmitting an RS-spread-spectrum signal at the second frequency, the improvement comprising:

a BS transmitter, located at each base station, for transmitting a BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal transmitted within a respective time slot assigned to the respective BS transmitter, and having a bandwidth no more than twenty per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals;

each of said plurality of remote stations including an RS receiver, for receiving the BS-channel-sounding signal at the second frequency, each RS receiver having,

an RS demodulator for tracking the BS-channel-sounding signal, thereby outputting an RS-receiver signal;

a frequency-adjust circuit, coupled to said RS demodulator and responsive to the RS-receiver signal, for compensating to the second frequency the RS-spread-spectrum signal of said RS-spread-spectrum transmitter located at said remote station;

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each of said plurality of remote stations including an RS-power-level circuit, responsive to the RS-receiver signal, for adjusting an initial RS-power level of said RS-spread-spectrum transmitter located at said remote station; and

an interference-reduction subsystem, located at said base station and at a front end to said BS-spread-spectrum receiver, for reducing, at the second frequency, the BS-channel-sounding signal from the RS-spread-spectrum signal arriving at said base station.

22. An improvement to a spread-spectrum system having a plurality of base stations covering a geographic area, with each base station communicating within a geographic cell with a plurality of remote stations (RS), with each base station (BS) having a BS-spread-spectrum transmitter for transmitting a plurality of BS-spread-spectrum signals at a first frequency and a BS-spread-spectrum receiver for receiving, at a second frequency, a plurality of RS-spread-spectrum signals from said plurality of remote stations, with the plurality of BS-spread-spectrum signals at the first frequency outside a correlation bandwidth of the plurality of RS-spread-spectrum signals at the second frequency, with each of said plurality of remote stations having an RS-spread-spectrum transmitter for transmitting an RS-spread-spectrum signal at the second frequency, the improvement comprising:

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a BS transmitter, located at each base station, for transmitting a BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal transmitted within a respective time slot assigned to the respective BS transmitter, and having a bandwidth no more than twenty per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals;

each of said plurality of remote stations including an RS receiver, for receiving the BS-channel-sounding signal at the second frequency, each RS receiver having an RS demodulator for tracking the BS-channel-sounding signal, thereby outputting an RS-receiver signal;

each of said plurality of remote stations including an RS-power-level circuit, responsive to the RS-receiver signal, for adjusting an initial RS-power level of said RS-spread-spectrum transmitter located at said remote station; and

an interference-reduction subsystem, located at said base station and at a front end to said BS-spread-spectrum receiver, for reducing, at the second frequency, the BS-channel-sounding signal from the RS-spread-spectrum signal arriving at said base station.

23. An improvement to a spread-spectrum system having a plurality of base stations covering a geographic area, with each base station communicating within a geographic cell with a

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plurality of remote stations (RS), with each base station (BS) having a BS-spread-spectrum transmitter for transmitting a plurality of BS-spread-spectrum signals at a first frequency and a BS-spread-spectrum receiver for receiving, at a second frequency, a plurality of RS-spread-spectrum signals from said plurality of remote stations, with the plurality of BS-spread-spectrum signals at the first frequency outside a correlation bandwidth of the plurality of RS-spread-spectrum signals at the second frequency, with each of said plurality of remote stations having an RS-spread-spectrum transmitter for transmitting an RS-spread-spectrum signal at the second frequency, the improvement comprising:

a BS transmitter, located at each base station, for transmitting a BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal transmitted within a respective time slot assigned to the respective BS transmitter, and having a bandwidth no more than twenty per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals;

each of said plurality of remote stations including an RS receiver, for receiving the BS-channel-sounding signal at the second frequency, each RS receiver having,

an RS demodulator for tracking the BS-channel-sounding signal, thereby outputting an RS-receiver signal;

a frequency-adjust circuit, coupled to said RS

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demodulator and responsive to the RS-receiver signal, for compensating to the second frequency the RS-spread-spectrum signal of said RS-spread-spectrum transmitter located at said remote station; and

an interference-reduction subsystem, located at said base station and at a front end to said BS-spread-spectrum receiver, for reducing, at the second frequency, the BS-channel-sounding signal from the RS-spread-spectrum signal arriving at said base station.

24. The improvement to the spread-spectrum system as set forth in claim 21, 22, or 23, with said BS transmitter transmitting the BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than ten per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

25. The improvement to the spread-spectrum system as set forth in claim 21, 22, or 23, with said BS transmitter transmitting the BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than five per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

26. The improvement to the spread-spectrum system as set

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forth in claim 21, 22, or 23, with said BS transmitter transmitting the BS-channel-sounding signal at the second frequency, with the BS-channel-sounding signal having a bandwidth no more than one per cent of the spread-spectrum bandwidth of the plurality of RS-spread-spectrum signals.

27. The method for improving the spread-spectrum system as set forth in claim 1, 2 or 3, with said interference-reduction subsystem including a notch filter for notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

28. The method for improving the spread-spectrum system as set forth in claim 4, with said interference-reduction subsystem including a notch filter for notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

29. The method for improving the spread-spectrum system as set forth in claim 5, with said interference-reduction subsystem including a notch filter for notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

30. The method for improving the spread-spectrum system as

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set forth in claim 6, with said interference-reduction subsystem including a notch filter for notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

31. The method for improving the spread-spectrum system as set forth in claim 7 or 8, with said interference-reduction means including a notch filter for notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

32. The method for improving the spread-spectrum system as set forth in claim 9, with said interference-reduction means including a notch filter for notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

33. The method for improving the spread-spectrum system as set forth in claim 10, with said interference-reduction means including a notch filter for notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

34. The method for improving the spread-spectrum system as set forth in claim 11, with said interference-reduction means

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including a notch filter for notch filtering the BS-channel-sounding signal from the plurality of RS-spread-spectrum signals.

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